

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the applications:

Listing of Claims:

Claim 1. (Currently Amended) A motor control system for driving a motor with a PWM control using an electric power converter such as a three-phase inverter, ~~etc.~~, comprising:

junction temperature calculating means for calculating a junction temperature of a switching element of the electric power converter; and

junction temperature reducing means for comparing the junction temperature calculated by the junction temperature calculating means with a preset temperature limit and for performing junction temperature reduction processing to make the junction temperature equal to or less than the temperature limit when the junction temperature exceeds the temperature limit.

Claim 2. (Currently Amended) A motor control system for driving a motor with a PWM control using an electric power converter such as a three-phase inverter, ~~etc.~~, comprising:

loss calculating means for calculating a loss of a switching element of the electric power converter; and

loss reducing means for comparing the loss calculated by the loss calculating means with a preset loss limit and for performing loss reduction processing to make the loss equal to or less than the loss limit when the loss exceeds the loss limit.

Claim 3. (Currently Amended) A motor control system for driving a motor with a PWM control using an electric power converter such as a three-phase inverter, ~~etc.~~, comprising:

temperature detecting means for detecting a temperature of a switching element of the electric power converter;

junction temperature calculating means for calculating a junction temperature of the switching element of the electric power converter when the temperature detected by the temperature detecting means is between a maximum temperature limit of the switching element and a predetermined temperature which is lower than the maximum temperature limit;

junction temperature reducing means for comparing the junction temperature calculated by the junction temperature calculating means with a preset temperature limit when the temperature detected by the temperature detecting means is between the maximum temperature limit of the switching element and the predetermined temperature which is lower than the

maximum temperature limit and for performing junction temperature reduction processing when the junction temperature exceeds the temperature limit;

loss calculating means for calculating a loss of the switching element of the electric power converter when the temperature detected by the temperature detecting means is equal to or less than the predetermined temperature; and

loss reducing means for comparing the loss calculated by the loss calculating means with a preset loss limit when the temperature detected by the temperature detecting means is equal to or less than the predetermined temperature and for performing loss reduction processing to make the loss equal to or less than the loss limit when the loss exceeds the loss limit.

Claim 4. (Currently Amended) A motor control system for driving a motor with a PWM control using an electric power converter such as a three-phase inverter, ~~etc.~~, comprising:

loss calculating means for calculating a loss of a switching element of the electric power converter;

junction temperature calculating means for calculating a junction temperature of the switching element of the electric power converter;

loss reducing means for comparing the loss calculated by the loss calculating means with a preset loss limit and for performing loss reduction processing to make the loss equal to or less than the loss limit when the loss exceeds the loss limit; and

junction temperature reducing means for comparing, when it is determined by said comparison that the loss is equal to or less than the loss limit or when the loss becomes equal to or less than the loss limit by the loss reduction processing, the junction temperature calculated by the junction temperature calculating means with a preset temperature limit and for performing junction temperature reduction processing to make the junction temperature equal to or less than the temperature limit when the junction temperature exceeds the temperature limit.

Claim 5. (Currently Amended) The motor control system according to claim 1, ~~3 or 4~~, wherein said junction temperature reducing means carries out the junction temperature reduction processing by means of at least one of a method for reducing a number of switchings per unit time and a method for reducing an electric current flowing through the switching element.

Claim 6. (Currently Amended) The motor control system according to claim 2, ~~3 or 4~~, wherein said loss reducing means carries out the loss reduction processing by means of at least

one of a method for reducing a number of switchings per unit time and a method for reducing an electric current flowing through the switching element.

Claim 7. (Original) The motor control system according to claim 5, wherein the number of switchings is reduced by lowering a frequency of a base carrier used for generation of a PWM signal.

Claim 8. (Original) The motor control system according to claim 6, wherein the number of switchings is reduced by lowering a frequency of a base carrier used for generation of a PWM signal.

Claim 9. (Original) The motor control system according to claim 5, wherein the electric current is reduced by decreasing a duty cycle of a PWM signal.

Claim 10. (Original) The motor control system according to claim 6, wherein the electric current is reduced by decreasing a duty cycle of a PWM signal.

Claim 11. (New) The motor control system according to claim 3, wherein said junction temperature reducing means carries out the junction temperature reduction processing by means of at least one of a method for reducing a number of switchings per unit time and a method for reducing an electric current flowing through the switching element.

Claim 12. (New) The motor control system according to claim 11, wherein the number of switchings is reduced by lowering a frequency of a base carrier used for generation of a PWM signal.

Claim 13. (New) The motor control system according to claim 11, wherein the electric current is reduced by decreasing a duty cycle of a PWM signal.

Claim 14. (New) The motor control system according to claim 4, wherein said junction temperature reducing means carries out the junction temperature reduction processing by means of at least one of a method for reducing a number of switchings per unit time and a method for reducing an electric current flowing through the switching element.

Claim 15. (New) The motor control system according to claim 14, wherein the number of switchings is reduced by lowering a frequency of a base carrier used for generation of a PWM signal.

Claim 16. (New) The motor control system according to claim 14, wherein the electric current is reduced by decreasing a duty cycle of a PWM signal.

Claim 17. (New) The motor control system according to claim 3, wherein said loss reducing

means carries out the loss reduction processing by means of at least one of a method for reducing a number of switchings per unit time and a method for reducing an electric current flowing through the switching element.

Claim 18. (New) The motor control system according to claim 17, wherein the number of switchings is reduced by lowering a frequency of a base carrier used for generation of a PWM signal.

Claim 19. (New) The motor control system according to claim 17, wherein the electric current is reduced by decreasing a duty cycle of a PWM signal.

Claim 20. (New) The motor control system according to claim 4, wherein said loss reducing means carries out the loss reduction processing by means of at least one of a method for reducing a number of switchings per unit time and a method for reducing an electric current flowing through the switching element.

Claim 21. (New) The motor control system according to claim 20, wherein the number of switchings is reduced by lowering a frequency of a base carrier used for generation of a PWM signal.

Claim 22. (New) The motor control system according to claim 20, wherein the electric current is reduced by decreasing a duty cycle of a PWM signal.